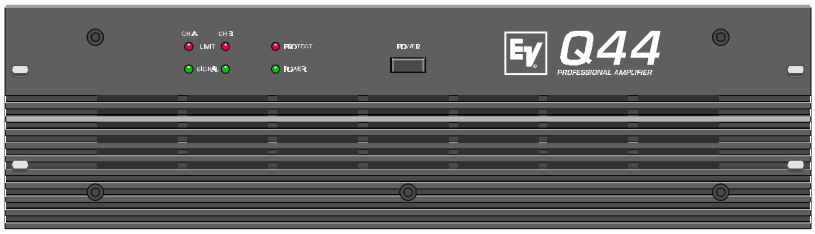
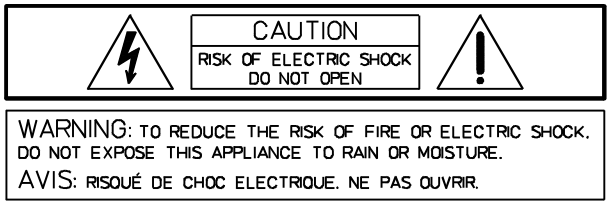
Electro-Voice®

# Q44/Q66 PROFESSIONAL AMPLIFIER

## OWNER'S MANUAL



# IMPORTANT SAFETY INSTRUCTIONS


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK.
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
AVIS: RISQUÉ DE CHOC ELECTRIQUE. NE PAS OUVRIR.

The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintance (servicing) instructions in the literature accompanying the appliance.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings.
   Install in accordance with the manufacturer's instructions.
8. Install only in rack with back cover.
9. Only use attachments/accessories specified by the manufacturer.
10. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
11. To completely disconnect mains power from this apparatus, the power supply cord must be unplugged

**For US and CANADA only:**

Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrican for replacement of the obsolete outlet.

# IMPORTANT SERVICE INSTRUCTIONS

**CAUTION: These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the Operating Instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.**

1. Security regulations as stated in the EN 60065 (VDE 0860) and the CSA E60065-00 have to be obeyed when servicing the appliance.
2. Use of a mains separator transformer is mandatory during maintenance while the appliance is opened, needs to be operated and is connected to the mains
3. Switch off the power before retrofitting any extensions, changing the mains voltage or the output voltage.
4. The minimum distance between parts carrying mains voltage and any accessible metal piece (metal enclosure), respectively between the mains poles has to be **3 mm** and needs to be minded at all times.
   The minimum distance between parts carrying mains voltage and any switches or breakers that are not connected to the mains (secondary parts) has to be **6 mm** and needs to be minded at all times.
5. Replacing special components that are marked in the circuit diagram using the security symbol (Note) is only permissible when using original parts.
6. Altering the circuitry without prior consent or advice is not legitimate.
7. Any work security regulations that are applicable at the location where the appliance is being serviced have to be strictly obeyed. This applies also to any regulations about the work place itself.
8. All instructions concerning the handling of **MOS** - circuits have to be observed.

**Note:** **SAFETY COMPONENT (HAS TO BE REPLACED WITH ORIGINAL PART ONLY)**

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### DESCRIPTION

First of all, we would like to express our thanks and at the same time congratulate you on the decision to buy one of our Q-SERIES power amplifiers.

ElectroVoice Q-SERIES amplifiers are made to meet the highest requirements of any on-the-road application. Thus they provide on-board protection against thermal and capacitive overload, short-circuit and the occurrence of HF or DC at the output. Additionally, special circuitry prevents the output-stage transistors from being damaged by Back-EMF. During soft start, delayed switching of the power outputs is accomplished via relays and a limiter controls the initial current inrush, preventing the mains fuse from being blown during the power-on operation.

The mechanical construction as well is carried out following the highest precision standards of the industry. The robust steel chassis provides extreme rigidity and it is meant to live through any hard wearing condition of a touring application. Thermal stability is guaranteed by two 3-Mode silently running fans that offer the possibility to also use the amplifiers in a studio environment.

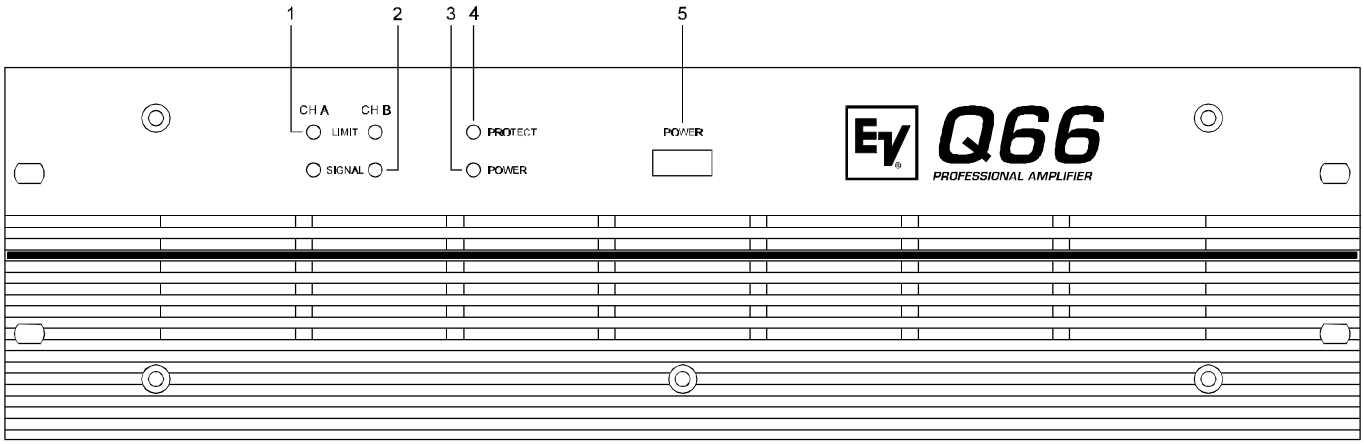
The extensive comparator circuitry constantly monitors the input and output signals and activates the internal limiters whenever a non-linear operational state is encountered. This provides reliable protection of the connected loudspeaker systems against overload and clipping. The sound quality of the Q-SERIES power amplifiers is superb. Using comprehensive dimensioned power supply units with low-interference toroidal transformers gains a headroom that exceeds the nominal power handling capacity by far. No V/I-Foldback-Limiter circuits are employed within the power amplifiers, making it possible to operate the amps on complex loads up to ±90° phase angles without a problem.

The input facilities are carried out as balanced XLRF-type sockets while the Direct-Outs – on which the carried-through signals are present – come as XLRM-type connectors. Using the Input Routing-switches lets you determine if the Q-SERIES amplifiers are operated in DUAL (stereo) or PARALLEL (monaural) mode; “mono-bridged” operation is also possible.

The dB-scaled level controls are to be found on the rear panel. These potentiometers guarantee precise and reliable operation. The easy readable LED display on the front panel offers quick optical information on the power amplifiers’ momentary operational mode. For each channel individually the display shows whether they are operational, a signal is present at the outputs, when the limiters are activated, and whether one of the protection circuits has been engaged or not. The power outputs CANNEL A, CHANNEL B and BRIDGED OUT are carried out as Speakon connectors. A ground-lift switch that separates the enclosure from the appliance’s ground potential and therefore helps to eliminate ground noise loops and the mono bridged mode switch are also located on the rear panel. In normal operation all Q-SERIES power amplifiers can be used to drive loads down to 2 ohms; in bridged mode the minimal load is 4 ohms. All amps are equipped with extremely silent running fans providing front-to-rear air circulation, guaranteeing trouble-free operation even in smaller power amplifier rack systems.

Studying this owner’s manual carefully will provide you with further and more detailed information about the Q-SERIES power amplifiers. Thus we recommend to keep on reading, assuring you that the Electro Voice Q-SERIES power amplifiers will provide you with a lot of fun and satisfaction in your work.

## *FRONT PANEL*




**1. LIMIT**

This indicator lights when the amplifier enters clipping and the internal limiter is activated. Short-term indication is problem-free. Anyway, if this indicator lights continuously, reducing the overall volume is recommended to avoid that the connected loudspeaker systems are getting damaged from overload.

**2. SIGNAL INDICATOR**

This indicator lights when an output signal is present. In case of short-circuited speaker cabling or one of the amplifier's protection functions is engaged the indicator is off, showing that there is no signal outputted.

**3. PROTECT**

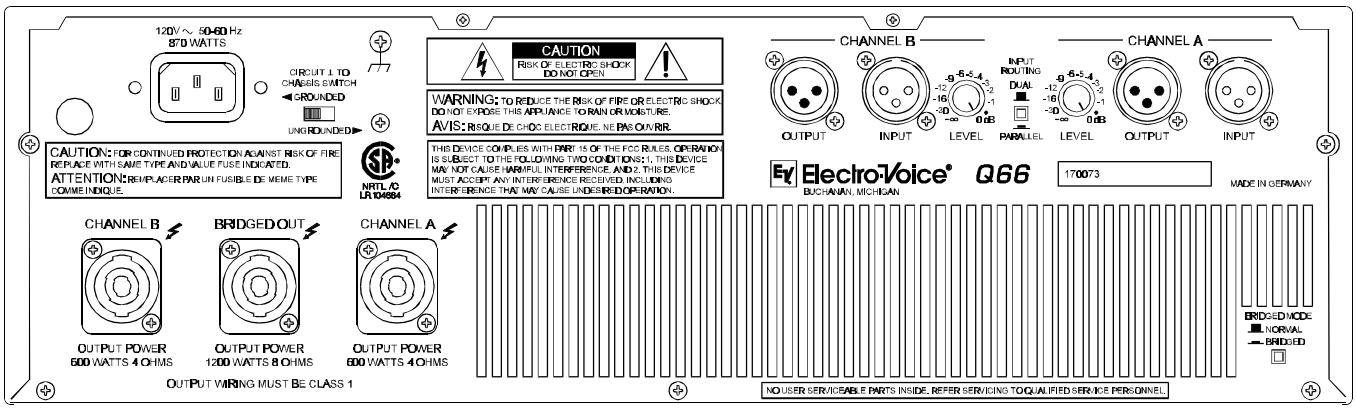
If this indicator lights during operation, one of the amp's internal protection functions against thermal overload, short-circuit, occurrence of HF or DC at the output … has been engaged. The cause that let the amplifier enter the protection mode – e. g. a short-circuited speaker cable – has to be eliminated. In case of thermal overload you have to wait until the power amplifier returns into normal operation mode.

**4. POWER ON INDICATOR**

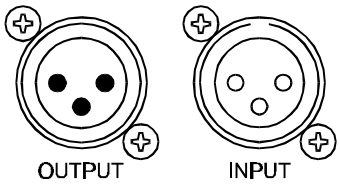
This LED lights when the appliance's power switch has been engaged. If the indicator does not light after you have engaged the power switch, either the amplifier is not connected to the mains or the internal mains fuse is blown and has to be replaced.

**5. POWER SWITCH**

Using the POWER switch you turn the amplifiers power on. To eliminate unwanted noise and knacks in the connected speaker systems, loudspeaker output switching is performed delayed via relays. An initial current inrush limiter prevents the mains fuse from being blown during power-on.

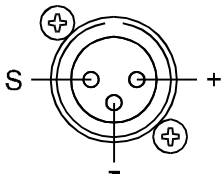

120V ~ 50-60 Hz
870 WATTS
CIRCUIT L TO CHASSIS SWITCH
GROUNDED
UNGROUNDED
CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
AVIS: RISQUE DE CHOC ELECTRIQUE. NE PAS OUVRIR.
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE AND VALUE FUSE INDICATED.
ATTENTION: REMPLACER PAR UN FUSIBLE DE MEME TYPE COMME INDIQUE.
NRTL/C LR 104684
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: 1. THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND 2. THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
CHANNEL B
CHANNEL A
OUTPUT
INPUT
LEVEL
INPUT ROUTING
DUAL
PARALLEL
Electro-Voice
BUCHANAN, MICHIGAN
Q66
170073
MADE IN GERMANY
CHANNEL B
BRIDGED OUT
CHANNEL A
OUTPUT POWER 600 WATTS 4 OHMS
OUTPUT POWER 1200 WATTS 8 OHMS
OUTPUT POWER 600 WATTS 4 OHMS
OUTPUT WIRING MUST BE CLASS 1
BRIDGED MODE
NORMAL
BRIDGED
NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

## POWER AMPLIFIER INPUTS

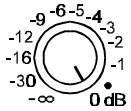



Parallel to the XLR-type inputs, XLR-type output connectors are provided, offering the opportunity to feed additional power amplifiers with the same signal.
The inputs are electrically balanced with pin-assignment according to the IEC 268 standard.
Pin-assignment of the XLR-type input connectors:

PIN 1: SHIELD
PIN 2: a, +
PIN 3: b, -




Input sensitivity is factory set to 0 dBu.

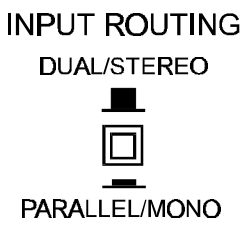


LEVEL

## LEVEL

Potentiometers with a dB-scaling to adjust the overall amplification of the power amplifier. These controls should be set between 0 dB and –6 dB, depending on the output of the connected equipment – e. g. a mixing console. The printed scale shows the actual amount of damping in the amplification of the power amplifier.

## INPUT ROUTING

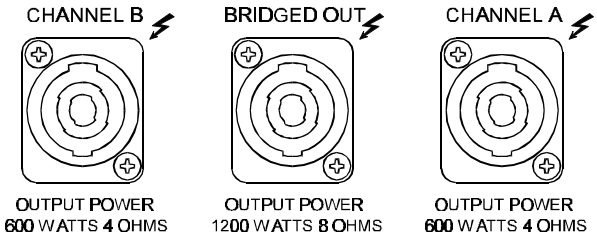



### PARALLEL MONAURAL

Setting the selector switch to the PARALLEL/MONO position puts the channel A and channel B inputs in electrically direct parallel configuration, leaving you still the possibility to control the channels' level settings separately, using the output controls A and B.

### DUAL STEREO

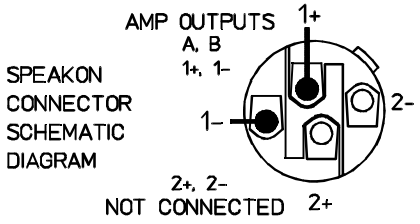
When the selector switch is set to its DUAL/STEREO position both channels are amplified individually.

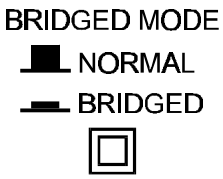



## Power Amplifier Outputs

The power amplifier's channel A (left) and channel B (right) outputs are carried out as SPEAKON output connectors.

The bridged-out connector conducting the output signal in bridged mode operation is protected by a plastic cover to avoid inadvertently plugging a speaker cable into the wrong connector.



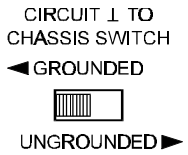




### BRIDGED MODE

When the bridged mode switch is engaged you will have to use the channel A input. The channel B input is out of function. The signal gets internally inverted and fed to the channel B power amp. The two amplifiers A+B are now used in push-pull operation providing the double output voltage at the BRIDGED-OUT connector.

The regular output voltages of the power amplifiers A and B are still present at the individual output connectors CHANNEL A and CHANNEL B but in respect to the inverted phase, using these signals is not recommendable.

**Bridged mode operation on loads of 2 ohms is not admissible.**




### GROUND-LIFT SWITCH

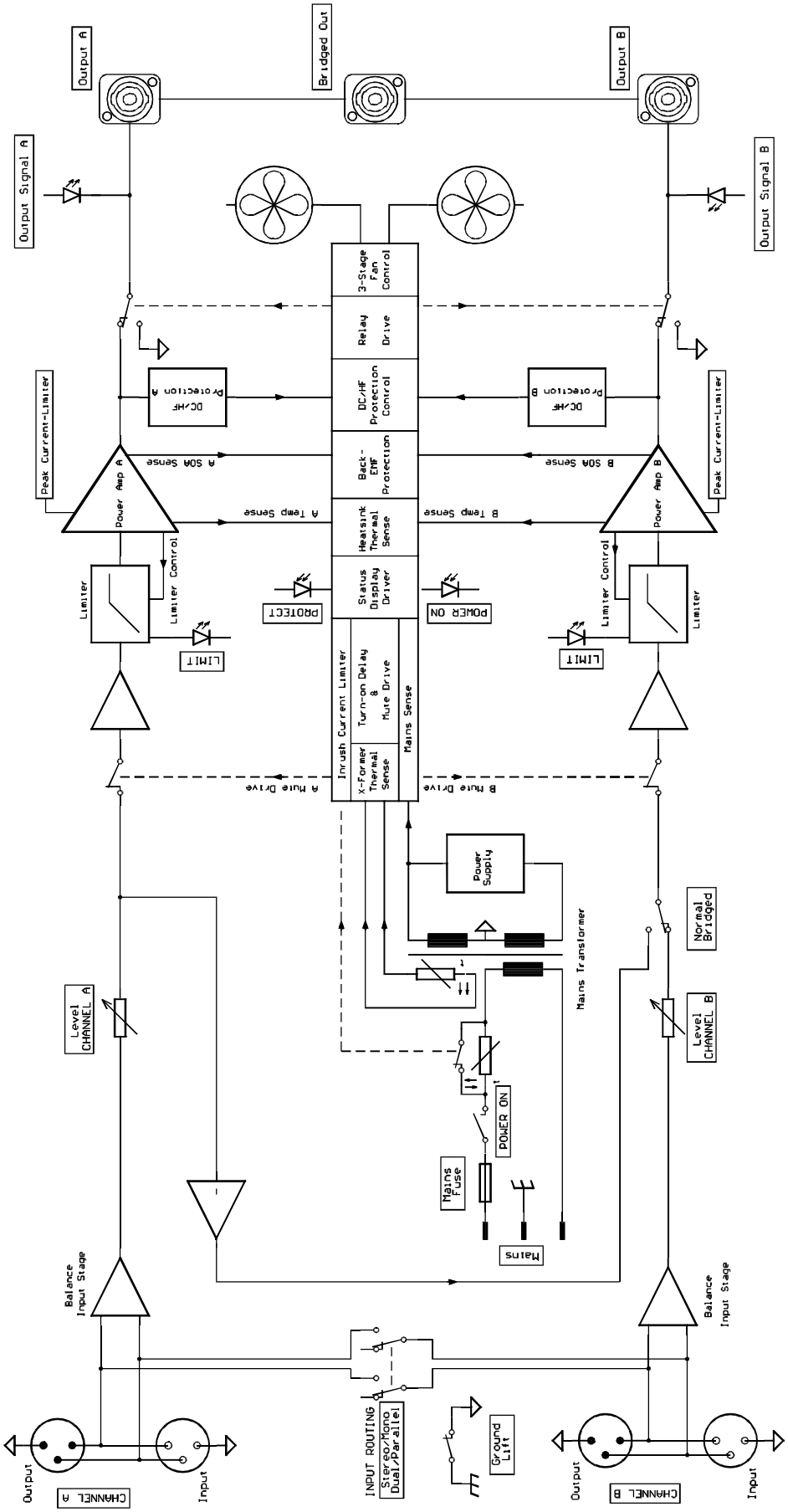
The ground-lift switch is meant to help you in avoiding ground noise loops. Whenever the power amplifier is installed in a 19" rack system being operated together with other equipment, the recommended setting of the switch is the GROUNDED position. In case the power amplifier is used together with appliances that are connected to different ground potentials, the recommended setting is UNGROUNDED.

**Technical Specifications: Q44, Q66**

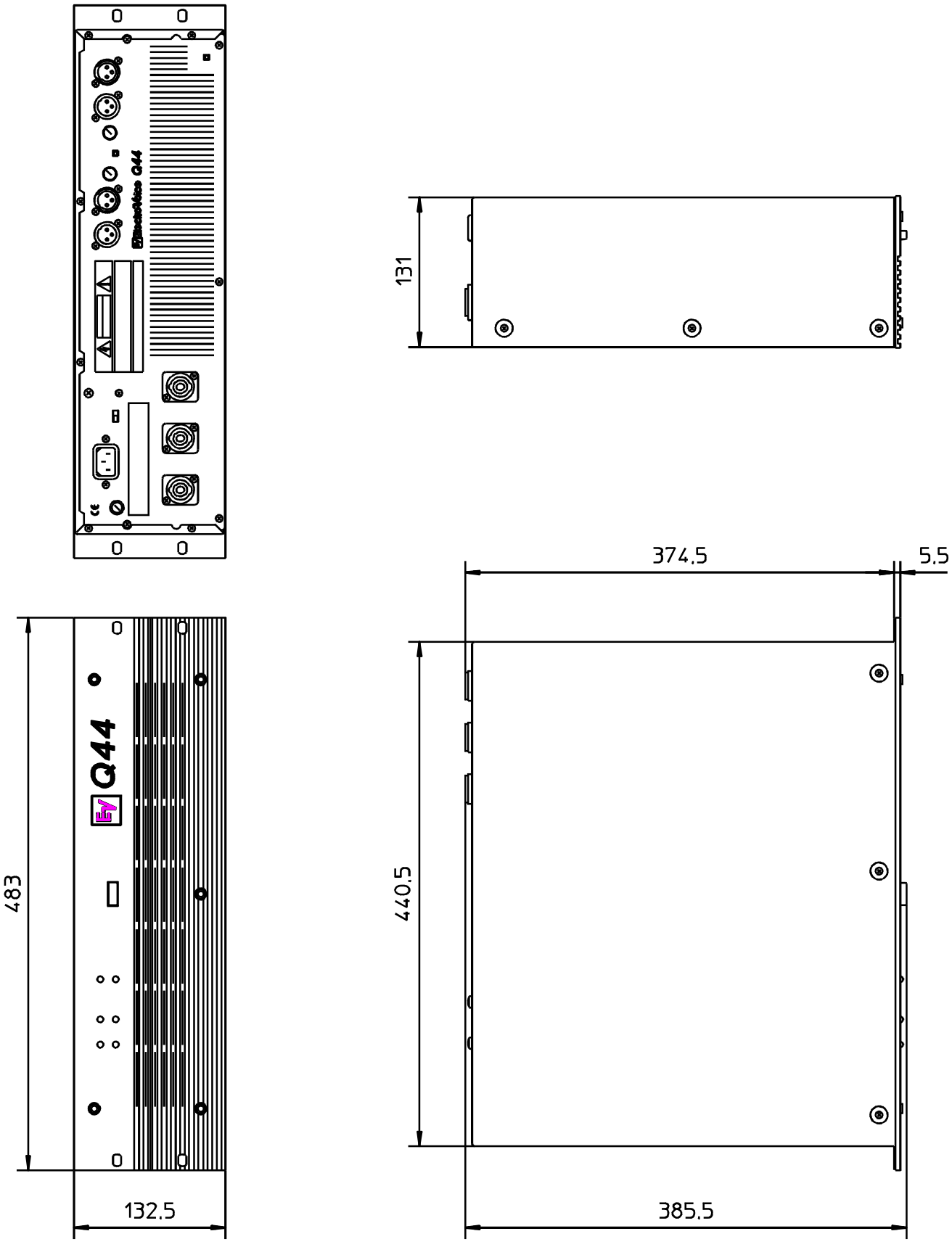
Amplifier at rated conditions, both channels driven with 8 ohms loads, unless otherwise specified.

| | Q44 | | | Q66 | | |
|---|---|---|---|---|---|---|
| **Load Impedance** | **8 Ω** | **4 Ω** | **2 Ω** | **8 Ω** | **4 Ω** | **2 Ω** |
| **Maximum Midband Output Power**<br>THD=1%, 1kHz | 280W | 450W | 650W | 380W | 600W | 850W |
| **Rated Output Power**<br>THD< 0.2%, 20Hz ... 20kHz | 230W | 350W | 450W | 300W | 500W | 650W |
| **Max. Single Channel Output Power**<br>Dynamic-Headroom, IHF-A | 340W | 640W | 720W | 460W | 880W | 950W |
| **Maximum Bridged Output Power**<br>THD=1%, 1kHz | 900W | 1300W | ——— | 1200W | 1700W | ——— |
| **Maximum RMS Voltage Swing**<br>THD=1%, 1kHz | | 56V | | | 64V | |
| **Voltage Gain**<br>at 1 kHz | | 34dB | | | 35dB | |
| **Slew Rate** | | 25V/µs | | | 30V/µs | |
| **Power Consumption**<br>at 1/8 maximum output power @ 4 Ω | | 690W | | | 870W | |
| **Input Sensitivity**<br>at rated output power @ 4 Ω, 1 kHz | | | 0dBu ( 775mV) | | | |
| **THD at rated output power,**<br>MBW=80kHz, 1 kHz | | | < 0.05 % | | | |
| **IMD-SMPTE**<br>60 Hz, 7 kHz | | | < 0.08 % | | | |
| **DIM30**<br>3.15kHz, 15 kHz | | | < 0.03 % | | | |
| **Crosstalk**<br>ref. 1kHz, at rated output power | | | <-80 dB | | | |
| **Frequency Response**<br>-1dB, ref. 1 kHz | | | 13Hz ... 45kHz | | | |
| **Power Bandwith**<br>THD=1%, ref. 1kHz, half power @ 4 Ω | | | 10Hz ... 50kHz | | | |
| **Input Impedance**<br>20Hz ... 20 kHz, balanced | | | 20kΩ | | | |
| **Damping Factor**<br>at 100Hz / 1kHz | | | >300 / >200 | | | |
| **Signal to Noise Ratio**<br>A-weighted | | | 103dB | | | |
| **Power Requirements** | | | 120V, 50Hz ... 60Hz | | | |
| **Protection** | | | Audio limiters, High temperature, DC, HF, Back-EMF, Peak current limiters, Inrush current limiters, Turn-on delay | | | |
| **Cooling** | | | Front-to-Rear, 3-stage-fans | | | |
| **Safety Class** | | | I | | | |
| **Dimensions (W x H x D), mm** | | | 483 x 132.5 x 385.5 | | | |
| **Weight** | | 15kg | | | 16kg | |

## *BLOCK DIAGRAM*



Dimensions (in mm)



**WARRANTY (Limited)**

Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid.

**Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) Malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d): malfunction resulting from misuse or abuse of the product; or (e): malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice or any of its authorized service representatives.

**Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Telex or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. Contact Telex customer service at:
Telex Communications, Inc West First Street, Blue Earth MN 56013, Phone 800-218-2412 + 2128, Fax 507-526-2295

**Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

**Electro-Voice Electronics** are guaranteed against malfunction due to defects in materials or workmanship for a period of three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty Statement.

Service and repair address for this product:
Telex Communications, Inc West First Street, Blue Earth MN 56013, Phone 800-218-2412 + 2128, Fax 507-526-2295

Specifications subject to change without notice.

EVI AUDIO

USA Telex Communications Inc., 12000 Portland Ave. South, Burnsville, MN 55337, Phone: +1 952-884-4051, FAX: +1 952-884-0043

Germany EVI AUDIO GmbH, Hirschberger Ring 45, D 94315, Straubing, Germany Phone: 49 9421-706 0, FAX: 49 9421-706 265

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